IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

SAS INSTITUTE INC.,	
Plaintiff,	
v.	Civil Action No. 2:18-CV-00295-JRG
WORLD PROGRAMMING LIMITED; LUMINEX SOFTWARE, INC.; YUM! BRANDS, INC.; PIZZA HUT, INC.; and SHAW INDUSTRIES GROUP, INC.,	**Jury Trial Demanded**
Defendants.	

PARTIES JOINT CLAIM CONSTRUCTION CHART PURSUANT TO P.R. 4-5(d)

Plaintiff SAS Institute, Inc. ("Plaintiff") and Defendants World Programming Limited;

Yum! Brands, Inc. ("Yum!"); and Pizza Hut, Inc. ("Pizza Hut"); (collectively, "Patent

Defendants") (Plaintiff and Patent Defendants together, "Parties") hereby submit their Joint

Claim Construction Chart pursuant to P. R. 4-5(d).

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I.   U.S. PATENT NO. 7,170,519 (THE "'519 PATENT")

A.   "graph style data item" (claims 1, 5, 12, 14, 15, 16, 17, 18, 20, 21, 22, 25, 40, 41, 42, 43, 44, 45, 56)

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A computer-implemented method for generating data graphical displays, comprising the steps of: receiving data to be displayed in a non-textual format, said received data being indicative of a plurality of variables; retrieving **graph style data items** from a data file, said **graph style data items** containing display characteristics to be used in displaying the data in a non-textual format; and	Plain and ordinary meaning. Alternatively: "Graph styles" define the display characteristics of data.[1]	A data item which exists substantially independent of the application generating the data and the application generating the graphical output. Alternatively: a data item that defines the display characteristics of data and exists substantially independent of the	

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[1] SAS contends that this alternative construction is fully supported by its opening claim construction brief at pp. 6-8; moreover, it is verbatim the same as the added language in Defendants' alternative proposed construction for "graph style data item."

Defendants Pizza Hut, Yum!, and World Programming's Position: At 4:40pm CST on the deadline to file this joint claim construction chart pursuant to P.R. 4-5(d), SAS Institute disclosed a new claim construction corresponding to a new claim term: (i) "**Graph styles**": define the display characteristics of data. At 4:40pm CST on the deadline to file this joint claim construction chart, SAS Institute also disclosed two new claim constructions for terms that SAS Institute previously briefed to the Court as no construction necessary. SAS Institute's two new constructions were: (ii) "**a superset of the SQL standard**": To be a superset of the SQL standard, a database system's query language format must be capable of processing all standard SQL queries, plus possibly other; and (iii) "**native**" / "**non-native**": A "non-native" database system is one that uses a different query syntax from the "native" database system. The day before the deadline to file this joint claim construction chart, SAS Institute also disclosed the following new construction: (iv) "**data model**": A set of attributes related to the run of a data mining application. Defendants object to these proposed constructions as untimely because they were not disclosed as proposed constructions, or alternative constructions, in SAS Institute's claim construction brief. Defendants have not had an opportunity to submit any responsive briefing concerning these new terms and new constructions. Defendants object to SAS Institute's extremely untimely claim construction disclosures.

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
accessing of the **graph style data items** in order to display non-textual formatted output based upon the **graph style data items**; said **graph style data items** containing graph style metadata that have descriptors specifying what statistical roles different data variables have within the data; wherein the specified statistical roles are used to define display characteristics for the data; wherein the data is displayed in a non-textual format in accordance with the **graph style data items** and the graph style metadata.		application generating the data and the application generating the graphical output.[2]	

B.   **"graph style data structure" (claims 34, 56, 58)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
34. A computer-implemented apparatus for generating data graphical displays based upon data, comprising: a graph generator module that receives data to be displayed in a non-textual format, said received data being indicative of a plurality of variables;	Plain and ordinary meaning. Alternatively: "Graph styles" define the display	A structure that uses a metadata approach whose abstraction is at a level above the particular type of graphic used to display the data. Alternatively:	

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[2] To the extent Defendants' contends that it is improper for alternative proposed constructions to have been introduced during claim construction briefing, SAS likewise objects to Defendants' alternative proposed constructions.

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
graph styles data structure that defines display characteristics to be used in displaying the data in a non-textual format, said **graph style data structure** containing graph style metadata that defines display characteristics for data through the metadata associating at least two of the variables with statistical roles; said graph generator module having data access to the **graph style data structure**, said graph generator module generating at least one graphical output based upon the received data, said graphical output being generated in accordance with the defined data characteristics of the **graph styles data structure**.	characteristics of data. [3]	a structure that (i) uses a metadata approach whose abstraction is at a level above the particular type of graphic used to display the data and (ii) contains graph styles format data and graph styles metadata.	

C.   **"graph style metadata" (claims 1, 6, 18, 33, 34, 37, 46, 58)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A computer-implemented method for generating data graphical displays, comprising the steps of:	Plain and ordinary meaning. Alternatively:	Metadata that is at a level above the particular type of graphic used to display the data and is used	

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[3] SAS contends that this alternative construction is fully supported by its opening claim construction brief at pp. 6-8; moreover, it is verbatim the same as the added language in Defendants' alternative proposed construction for "graph style data item."

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
receiving data to be displayed in a non-textual format, said received data being indicative of a plurality of variables; retrieving graph style data items from a data file, said graph style data items containing display characteristics to be used in displaying the data in a non-textual format; and accessing of the graph style data items in order to display non-textual formatted output based upon the graph style data items; said graph style data items containing **graph style metadata** that have descriptors specifying what statistical roles different data variables have within the data; wherein the specified statistical roles are used to define display characteristics for the data; wherein the data is displayed in a non-textual format in accordance with the graph style data items and the **graph style metadata**.	"Graph styles" define the display characteristics of data. [4]	independent of the graphic type used to depict the data.	

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[4] SAS contends that this alternative construction is fully supported by its opening claim construction brief at pp. 6-8; moreover, it is verbatim the same as the added language in Defendants' alternative proposed construction for "graph style data item."

D.   **"non-textual format" / "non-textual formatted output" (claims 1, 2, 5, 6, 7, 8, 9, 12, 14, 15, 16, 17, 33, 34, 37, 38, 39, 40, 41, 42, 43, 44, 45, 58)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A computer-implemented method for generating data graphical displays, comprising the steps of: receiving data to be displayed in a **non-textual format**, said received data being indicative of a plurality of variables; retrieving graph style data items from a data file, said graph style data items containing display characteristics to be used in displaying the data in a **non-textual format**; and accessing of the graph style data items in order to display **non-textual formatted output** based upon the graph style data items; said graph style data items containing graph style metadata that have descriptors specifying what statistical roles different data variables have within the data; wherein the specified statistical roles are used to define display characteristics for the data; wherein the data is displayed in a **non-textual format** in accordance with the graph style data items and the graph style metadata.	Plain and ordinary meaning.	Indefinite.	

E.   **"wherein the graph style metadata identifies a data variable as having a category role and identifies another data variable as having a response role, said category role and said response role being used <u>by in</u> different output non-textual formats" (claim 37)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
37. The apparatus of claim 34 **wherein the graph style metadata identifies a data variable as having a category role and identifies another data variable as having a response role, said category role and said response role being used <u>by in</u> different output non-textual formats**.	Wherein the graph style metadata identifies a data variable as having a category role and identifies another data variable as having a response role, said category role and said response role being used <u>to generate</u> different output non-textual formats Alternatively: Interpret to remove extraneous word "in" so that claim reads "…being used <u>by</u> different output non-textual formats." [5]	Indefinite.	

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[5] SAS contends that this alternative construction is fully supported by its opening claim construction brief at p. 15.

F.   **"the graph generator module" (claims 34, 52, 53, 58)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
34. A computer-implemented apparatus for generating data graphical displays based upon data, comprising: a **graph generator module** that receives data to be displayed in a non-textual format, said received data being indicative of a plurality of variables; graph styles data structure that defines display characteristics to be used in displaying the data in a non-textual format, said graph style data structure containing graph style metadata that defines display characteristics for data through the metadata associating at least two of the variables with statistical roles; said **graph generator module** having data access to the graph style data structure, said **graph generator module** generating at least one graphical output based upon the received data, said graphical output being generated in accordance with the defined data characteristics of the graph styles data structure.	Plain and ordinary meaning. 35 U.S.C. § 112 ¶6 does not apply.	Indefinite. 35 U.S.C. § 112 ¶6 applies. **Function(s)**: receives data to be displayed in a non-textual format; having data access to the graph style data structure; generating at least one graphical output based upon the received data **Structure**: none.	

II.   U.S. PATENT NO. 7,447,686 (THE "'686 PATENT")

A.   "a superset of the SQL standard" (claims 27, 28)

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
27. The method of claim 26 wherein the first database system's query language format utilizes a **superset of the SQL standard**. 28. The method of claim 26 wherein the second database system's query language format utilizes a **superset of the SQL standard**.	Plain and ordinary meaning. Alternatively: To be a superset of the SQL standard, a database system's query language format must be capable of processing all standard SQL queries, plus *possibly* others. [6]	A set that includes all of the SQL standard and additional elements not in the SQL standard.	

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[6] SAS contends that this alternative construction is fully supported by its opening claim construction brief at pp. 17-18 and its reply claim construction brief at p.7.

B.   **"wherein the first component software object is associated with a first method to textualize" / "wherein a first software driver textualizes through a second method" / "wherein a second software driver textualizes through a third method" (claim 1)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A computer-implemented method for handling a database statement from a first database system, comprising the steps of: receiving a first fourth-generation language database statement from the first database system, wherein the first database statement is formatted according to the first database system's query language format; accessing database functional language difference data, wherein the database functional language difference data indicates a format that contains at least one database functional statement difference from the first database system's query language format; generating a second fourth-generation language database statement that is used within a second database system, wherein the second database statement is generated based upon the first database statement and upon the accessed database functional language difference data, wherein the second database statement is compatible with the second database system's query language format; wherein a tree representative of the syntax of the database language used within the first database system and of metadata associated with the first	Plain and ordinary meaning.	Indefinite.	

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
database system is used in generating the second database statement wherein the tree contains logical pieces parsed from the first fourth-generation language database statement; using a plurality of component software objects to textualize the logical pieces contained in the tree, wherein textualizing a logical piece includes generating fourth-generation database language text; wherein a first component software object is associated with a first logical piece contained in the tree; **wherein the first component software object is associated with a first method to textualize**, into fourth-generation database language text, the first component software object's associated logical piece that is contained in the tree; using a plurality of software drivers to textualize logical pieces into fourth-generation database language text; **wherein a first software driver textualizes through a second method** a logical piece into fourth-generation database language text that is compatible with the second database system's query language format; **wherein a second software driver textualizes through a third method** a logical piece into fourth-generation database language text that is			

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
compatible with a third database system's query language format; switching association of the first component software object from the first method to the second method for fourth-generation database language textualization: wherein because of the switching of the association of the first component software object, the first component software object textualizes fourth-generation database language text that is compatible with the second database system's query language format and that is not compatible with the first database system's query language format.			

III.   U.S. PATENT NO. 8,498,996 (THE "'996 PATENT")

A.   "native" / "non-native" (claims 1, 2, 3, 5, 6, 7, 9, 10, 12-14, 19, 20, 21, 23, 24, 25, 27, 28, 30-32, 37, 38, 39, 41, 42, 43, 45, 46, 48-50)

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A computer-implemented method for processing a query, comprising: receiving a **native** syntax query requesting data stored in a **non-native** database that uses a **non-native** syntax, wherein the query is received at an application that is separate from the **non-native**	Plain and ordinary meaning. Alternatively: A "non-native" database system is	Indefinite.	

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
database, wherein the query requests that the data be retrieved from the **non-native** database, wherein the query requests that a processing operation be performed on the requested data by the application, wherein the query includes one or more expressions, and wherein one or more of the expressions includes one or more functions; parsing the **native** syntax query, wherein parsing includes identifying a function within an expression that cannot be processed by the **non-native** database, wherein the function specifies the processing operation to be performed on the requested data by the application, wherein a plurality of labels are associated with the function and the expression, and wherein labels include constant labels and format labels; analyzing the function and the expression to determine a context of the function within the expression, wherein the context describes how the function is used within the expression; generating, using one or more data processors, a final expression query by obtaining a control string from an internal table for each of the plurality of labels associated with the function and the expression, wherein label modifiers are applied to format labels; transforming the **native** syntax query into an equivalent **non-native** syntax query, wherein	one that uses a different query syntax from the "native" database system. [7]		

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[7] SAS contends that this alternative construction is fully supported by its opening claim construction brief at pp. 22-23.

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Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
transforming includes parsing and inserting the final expression query into the equivalent **non-native** syntax query using the function, the expression, and the context to translate the function and the expression into multiple functions and multiple expressions that are configured for processing by a **non-native** database system; transmitting the equivalent **non-native** syntax query to a **non-native** database system to generate results and to perform the processing operation on the generated results; receiving processed results from the **non-native** database system; and transmitting the processed results to a client application.			

IV.   U.S. PATENT NO. 6,920,458 (THE "'458 PATENT")

A.   "data model" (claims 1-6, 11, 24, 25, 28, 61, 63, 64, 65, 66, 67, 68, 72, 85, 86, 89)

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A model repository system, comprising: a data store for storing a plurality of data records;	Plain and ordinary meaning.	A set of attributes related to the run of a	

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
a data mining application for analyzing the data records and for generating a plurality of **data models**; and a model repository for storing the generated **data models**, wherein the model repository includes one or more index structures containing a plurality of attributes associated with the **data models**; wherein the **data models** are predictive **data models**; wherein the predictive **data models** are the entities being indexed by the one or more index structures such that the attributes of the predictive **data models** are stored within the one or more indexes; a model repository facility for exporting the generated **data models** to the model repository; at least three configuration files stored in the model repository, wherein a first configuration file stores information that is used by the model repository facility in exporting the generated **data models** to the model repository, and second and third configuration files store information that is used by the model repository system in building the main index in the model repository from attributes supplied by human end users and from the data mining application.	Alternatively: A set of attributes related to the run of a data mining application. [8]	data mining application, including the name and location of the data set that was analyzed and the resulting analysis.	

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[8] SAS contends that this alternative construction is fully supported by its reply claim construction brief at pp. 8-9, in which it indicated that it did not dispute this portion of Defendants' proposed construction.

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction

B.   **"index structure" (claims 1, 4, 5, 11, 15, 26, 27, 28, 61, 65, 66, 68, 72, 76, 87, 88, 89)**

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A model repository system, comprising: a data store for storing a plurality of data records; a data mining application for analyzing the data records and for generating a plurality of data models; and a model repository for storing the generated data models, wherein the model repository includes one or more **index structures** containing a plurality of attributes associated with the data models; wherein the data models are predictive data models; wherein the predictive data models are the entities being indexed by the one or more **index structures** such that the attributes of the predictive data models are stored within the one or more indexes; a model repository facility for exporting the generated data models to the model repository; at least three configuration files stored in the model repository, wherein a first configuration file stores information that is used by the model	Plain and ordinary meaning.	A pre-determined structure within the model repository for storing and indexing the generated data models to allow search and retrieval of the generated data models.	

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
repository facility in exporting the generated data models to the model repository, and second and third configuration files store information that is used by the model repository system in building the main index in the model repository from attributes supplied by human end users and from the data mining application.			

C.   "model repository facility" (claims 1, 3, 61, 64), (claims 27, 88), and (claims 9, 70)

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. A model repository system, comprising: a data store for storing a plurality of data records; a data mining application for analyzing the data records and for generating a plurality of data models; and a model repository for storing the generated data models, wherein the model repository includes one or more index structures containing a plurality of attributes associated with the data models; wherein the data models are predictive data models; wherein the predictive data models are the entities being indexed by the one or more index structures such that the attributes of the predictive data models are stored within the one or more indexes; a **model repository facility** for exporting the generated data models to the model repository; at least three configuration files stored in the model repository, wherein a first configuration file stores information that is used by the **model repository facility** in exporting the generated data models to the model repository, and second and third configuration files store information that is used by the model repository system in building the main index in the model repository	Plain and ordinary meaning. 35 U.S.C. § 112 ¶6 does not apply.	35 U.S.C § 112 ¶6 applies. **Function**: exporting the generated data models to the model repository **Structure**: Steps 112 through 141 of Figs 7A through 7C	

Disputed Term/Phrase and Claim(s)	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
from attributes supplied by human end users and from the data mining application.			
27. The model repository system of claim 1, wherein the **model repository facility** builds the index structures stored in the model repository after one or more selected models have been exported to the model repository.	Plain and ordinary meaning. 35 U.S.C. § 112 ¶6 does not apply.	35 U.S.C § 112 ¶6 applies. **Function**: building the index structures stored in the model repository **Structure**: Figs 8A through 8C	
9. The model repository system of claim 1, wherein the **model repository facility** is integrated into the data mining application.	Plain and ordinary meaning. 35 U.S.C. § 112 ¶6 does not apply.	No additional construction.	

Date: January 18, 2020   __/s/ Christian E Mammen_____

                                                Pressly M. Millen (admitted pro hac vice)
                                                Raymond M. Bennett (admitted pro hac vice)
                                                WOMBLE BOND DICKINSON (US) LLP
                                                555 Fayetteville Street, Suite 1100
                                                Raleigh, NC 27601
                                                Telephone: 919-755-2135
                                                Press.Millen@wbd-us.com
                                                Telephone: 919.755.2158
                                                Ray.Bennett@wbd-us.com

                                                Christian E. Mammen (admitted pro hac vice)
                                                Carrie Richey
                                                WOMBLE BOND DICKINSON (US) LLP
                                                1841 Page Mill Road, Suite 200
                                                Palo Alto, CA 94304
                                                Telephone: (408) 341-3067
                                                Chris.Mammen@wbd-us.com
                                                Telephone: (408) 341-3060
                                                Carrie.Richey@wbd-us.com

                                                Samuel B. Hartzell
                                                Womble Bond Dickinson (US) LLP
                                                555 Fayetteville Street, Suite 1100
                                                Raleigh, NC 27601
                                                919-755-2112
                                                Fax: 919-755-6772
                                                Sam.Hartzell@wbd-us.com

                                                Michael C. Smith
                                                Texas Bar No. 18650410
                                                Siebman, Forrest, Burg & Smith, LLP
                                                113 E. Austin Street
                                                Marshall, Texas 75670
                                                Tel: (903) 938-8900
                                                michaelsmith@siebman.com

                                                Attorneys for SAS Institute Inc.

Date: January 18, 2020   */s/ Bradley W. Caldwell*

CALDWELL CASSADY CURRY, P.C.

Bradley W. Caldwell
Texas Bar No. 24040630
Email: bcaldwell@caldwellcc.com
John Austin Curry
Texas Bar No. 24059636
Email: acurry@caldwellcc.com
John F. Summers
Texas State Bar No. 24079417
Email: jsummers@caldwellcc.com
Warren J. McCarty, III
Texas State Bar No. 24107857
Email: wmccarty@caldwellcc.com
Caldwell Cassady Curry P.C.
2101 Cedar Springs Road, Suite 1000
Dallas, Texas 75201
Telephone: (214) 888-4848
Facsimile: (214) 888-4849

ATTORNEYS FOR DEFENDANTS WORLD PROGRAMMING LIMITED, LUMINEX SOFTWARE, INC., YUM! BRANDS, INC., PIZZA HUT, INC. and SHAW INDUSTRIES GROUP, INC

WARD, SMITH & HILL, PLLC

T. John "Johnny" Ward Jr.
Texas Bar No. 00794818
jw@wsfirm.com
Claire Henry
Texas Bar No. 24053063
claire@wsfirm.com
Andrea L. Fair
Texas Bar No. 24078488
andrea@wsfirm.com
P.O. Box 1231
Longview, TX 75606
903-757-6400
903-757-2323 (Facsimile)

ATTORNEYS FOR DEFENDANTS WORLD PROGRAMMING LIMITED

VINSON & ELKINS LLP

Hilary L. Preston
Texas Bar No. 24062946 hpreston@velaw.com
Janice L. Ta
Texas Bar No. 24075138 jta@velaw.com
2801 Via Fortuna, Suite 100 Austin, TX 78701
512-542-8400
512-542-8610 (Facsimile)

Melissa L. James
Texas Bar No. 24074746 mjames@velaw.com
2001 Ross Ave., Suite 3900 Dallas, TX 75201
214-220-7804
214-999-7838 (Facsimile)

ATTORNEYS FOR DEFENDANTS YUM! BRANDS, INC. AND PIZZA HUT, INC.

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CERTIFICATE OF SERVICE

Pursuant to Fed. R. Civ. P. 5, I certify that on January 17, 2020, a copy of the foregoing was served electronically on all counsel of record.

/s/ Christian E. Mammen